CHAPTER 8

COMPUTER GENERATION

Overview

Introduction

Breakthroughs are being made in the graphic arts world through the use of computers. New wave imagery is replacing tired cliches. This innovative art world captivates our imagination with fantastic images that look surrealistic. Computer imagery or enhancement is rapidly becoming the norm in Navy graphics shops and presentations departments.

Objectives

The material in this chapter enables you to do the following:

- Identify software and assign and protect classifed data contained on disks.
- Identify computer viruses.
- Differentiate between common software features, options, and commands.
- Evaluate the differences between directories and subdirectories.
- Identify the steps needed to convert conventionally conceived images to digital imagery.
- Create, modify, save, and retrieve tags in desktop publishing software.
- Create, modify, save, and retrieve frames.
- Create, modify, save, and retrieve style sheets.
- Modify text attributes.
- Create, modify, save, and retrieve web pages.

Continued on next page

Acronyms

The following table contains a list of acronyms that your must know to understand the material in this chapter.

Acronym	Meaning
ASCII	American Standard Code for Information Interchange
Bit	Binary Digit
CPU	Central Processing Unit
CRT	Cathode-Ray Tube
CYMK	Cyan, Yellow, Magenta, and Black
DPI	Dots Per Inch
DTP	Desktop Publishing
E-mail	Electronic Mail
EMR	Electra-Magnetic Radiation
EPS or EPSF	Encapsulated Postscript Format
FAQ	Frequently Asked Questions
GB	Gigabyte
GIF	Graphic Images Format
GUI	Graphical User Interface
HTML	Hypertext Mark-up Language
http	Hypertext Transfer Protocol
JPEG or JPG	Joint Photographic Experts Group
KB	Kilobyte
LPI	Lines Per Inch

Continued on next page

Acronyms (Continued)

Acronym	Meaning
PC	Personal Computer
PDF	Portable Document File
RAM	Random Access Memory
RGB	Red, Green, Blue
RIFF	Raster Image File Format
RIP	Raster Image Processor
ROM	Read-Only Memory
SYSOP	System Operator
SVGA	Super Video Graphics Array
TIFF	Tag Image File Format
TSR	Terminate-and-Stay Residents
VGA	Video Graphics Array
WYSIWYG	What You See Is What You Get
WWW	World Wide Web

Continued on next page

Overview, Continued

In this chapter This chapter covers the following topics:

Software

Introduction

Computers can do nothing without a set of instructions the system operator inputs to the central processing unit. These instructions allow the computer to perform many functions including sorting, saving, and processing information with remarkable speed. Review *Illustrator Draftsman (DM)* Volume 1, chapter 3, or read NEETS Module 22, *Introduction to Digital Computers,* before studying this chapter to familiarize yourself with computer hardware systems.

Software

Software is the set of instructions, program parameters, or data. Hard drives and floppy disks are hardware; the data on the disk is software. The two categories of software are operating system software and applications software.

Operating systems software

Operating systems software manages the operation of the entire computer system. Its primary job is managing the system and system resources such as the disks, the printers, and the modems. Operating system software links computer hardware to applications software. Operating systems software exists primarily in read-only memory (ROM).

Installing operating systems software

Install operating system software onto the system hard disk drive before attempting to load applications programs. Follow the manufacturer's owner/user manual. The owner/user manual will tell you setup commands that lead you through the installation process from the display screen. The display screen prompts you to enter the appropriate keystrokes or mouse movements to place the software into the hard drive. Once you have operating system software installed, put the original distribution disks or CD ROM disks in a safe place. You may need the original operating system software distribution disks later.

Applications software

Applications or user software are program disks that help you accomplish specific tasks. Distribution disks for applications software require information about the microcomputer configuration or what devices make up the computer system. Applications software is created using WORM (Write Once/Read Many) technology and stores in ROM. This allows you to use the program without altering the original program' instructions.

Continued on next page

Installing applications software

Before installing applications software, make sure the operating system software is properly installed. Applications software won't install if there are problems with the operating system. Refer to the manufacturer's owner/user manual before installation to determine if the memory requirements of the program exceeds your hard drive capacity. Once you install applications software, put the original distribution disks in a safe place.

Using software wisely

To use software wisely, familiarize yourself with the capabilities and limitations of each software program and consciously develop good, systematic approaches in your work habits. The following list contains several smart work habits to develop that help you avoid common problems.

- Define document parameters before entering images or text. Defining document parameters allows applications software to paginate the document. Pagination includes setting the margins, page numbering, and selecting text attributes before entering the data into the document. Pagination saves the extra effort required to rearrange pages later. Once set, the computer memory retains the format settings and applies it to each page of the document without further prompting.

- If the software allows, display reveal codes (codes indicating selected functions) on the screen as you work by selecting this option from VIEW. This process allows you to see any coding errors made during the creation of the document. Not every software program displays reveal codes.

- Eliminate unused codes. If you are able to display reveal codes on the screen, remove erroneous or unused codes. Maintain only required coding in documents to make it easier to edit or modify text later. Unused or incorrect coding in documents affects the amount of control you have over the finished product.

- Do not use the SPACE bar to position text. Set tabs to indent text into documents. This procedure allows you to maintain control of the text if you must modify it later.

Continued on next page

Using software wisely (Continued)

- Break the habit of hitting the ENTER or RETURN key to move the curser to the left margin before completing a line of text. Using this key unnecessarily enters a hard return into the coding of the document. As you enter text, the curser automatically returns to the left margin when the line of text fills. This feature, called *word wrap*, enters a soft return vice a hard return into the document.

- Hit the SAVE option periodically. Although most computers have a timed back-up feature, this is a crash-protection feature only that saves data if you turn off the machine or close the document before saving it properly. Make it a habit to save data whenever you must look away from the document to answer the phone, hold a conversation, or look up reference material. Habitually saving material, in addition to the timed backup feature, lessens data loss should unforseen circumstances cause the computer to crash, freeze, or lock up.

- Use working copy disks. Using working copy disks saves memory space, and facilitates safeguarding and protection of classified or sensitive material. If the computer develops a virus or loses data during power fluctuations, the damages would be recoverable.

- Make back-up disks. At the end of the work day and even if you save data on the hard drive, make a back-up disk. This disk may save you hours of work if your hard drive crashes and you must swap out hard drives.

- Label disks. Label disks when created with the correct security marking and file names. This prevents inadvertently using disks that have data already stored, mixing classification levels, or misplacing data by mixing unlabeled used disks with unused disks.

- Select file names that can be identified by another SYSOP. Refer to the *Department of the Navy, Standard Subject Identification Codes* in SECNAVINST 5210.11 for the five sections and 13 major subject groups used in Navy graphics shops. Select file names that identify or easily cross reference to information on the disk.

Continued on next page

Using software wisely (Continued)

In sea-going environments, secure computer hardware to desks or tabletops to prevent damage from heavy rolls and pitching during high sea states.' Excessive movement of CPUs may cause Video Graphics Array (VGA) cards and SVGA (Super Video Graphics Array) cards to loosen causing the color balance of monitors to shift or blink erratically. A drop from a height of approximately 3 feet (desk height) may cause substantial and irreparable damage to hardware.

Keep liquids and foodstuffs away from computer equipment. Place drinks and food below the keyboard or on another surface to prevent accidental spills and debris from ruining equipment.

Software or disk security

Often the data on disks is classified or sensitive to national security. Graphics and text created electronically and stored on disks require protection. The procedures for protecting and marking disks, disks drives, and work stations differ slightly from the procedures for marking graphics, photographs, and documents. Security procedures for electronic data are found in the *Department of the Navy, Automated Data Processing Security Manual,* OPNAVINST 5239.1.

Security

The three levels of data processed electronically are Level I, Level II, and Level III. If your command processes Level I and/or Level II data, it must provide a specific degree of protection. The following table defines the 3 levels of data:

Level	Meaning
Level I	Classified; Confidential, Secret, and Top Secret
Level II	Unclassified; requires special protection, such as For Official Use Only and data covered by the Privacy Act of 1974
Level III	Unclassified

Continued on next page

Level I

Level I data (classified) handling requirements and procedures are similar to those for handling hard copy classified material. You are responsible for safeguarding this information at all times. Within Level I, the four modes of secure electronic processing of classified data are *system high, dedicated, multilevel,* and *controlled* mode. The following table specifically defines the four security modes:

Mode	Definition
System high	All computers on the network and connected peripherals protect data according to the requirements for the highest classification category and type of material contained in the system. System high requires a security clearance but not necessarily a need-to-know for all material in the system.
Dedicated	Specific users or a group of users with a security clearance and a need-to-know for the processing of a particular type of classified material exclusively use and control all of the computers and peripherals on a system.
Multilevel	Various types and categories of classified material stored and processed concurrently in a computer system that permits selective access to material by uncleared users and users with differing security clearances and need-to-know. This is a function of the operating system and associated system software.
Controlled	A computer system in which at least some users with access to the system have neither a security clearance nor a need-to-know for all classified material in the system.

Continued on next page

Level II

Level II data is unclassified data that requires special protection. To assure protection for processing Level II data, the Navy established the limited automated information system access security mode. A system or network operating in the limited access security mode restricts the access to data only to individuals who by their job function have a need to access the information.

Level III

Level III does not require the safeguards of Level I or Level II data. It does however, require proper handling to make sure that data is not lost or destroyed.

Electronic media security

Computer systems and their associated peripherals require control and safeguarding at all times. This protection includes the disks, diskettes, disk drives, monitors, printer ribbons, and generated hard copies. In general, the two types of electronic media are *working copy media* and *finished media.*

WORKING COPY MEDIA: Working copy media is temporary information. It stays within the confines and control of your activity. After creating a working copy, retain it for 180 days before destruction. Examples of working copy media are information used and updated at frequent intervals.

FINISHED MEDIA: Finished media is permanent information. It can be released to other commands and activities. Finished media contains information that does not change or is pertinent for more than 180 days.

Security controls

Date and mark classified electronic media when you create it. Assign disks classified Secret or Top Secret a sequential identification number to make tracking them easier. Control electronic media in the same manner prescribed for classified material. Protect electronic media according to the highest classification ever recorded on the disk. For media classified Top Secret or Secret, maintain a master list including the overall security classification and the identification number permanently assigned to the disk.

Continued on next page

Disk security markings

To avoid confusion, set aside groups of disks for recording classified data at each security level. Mark each disk or diskette with stick-on labels identifying the overall security classification and permanently assigned identification numbers. When you declassify and degauss disks, remove all external labels indicating the classification unless you immediately use the disks to store information of the same classification level.

Figure 8-1 shows how the different levels of classification should be clearly marked on the exterior labels of disks.

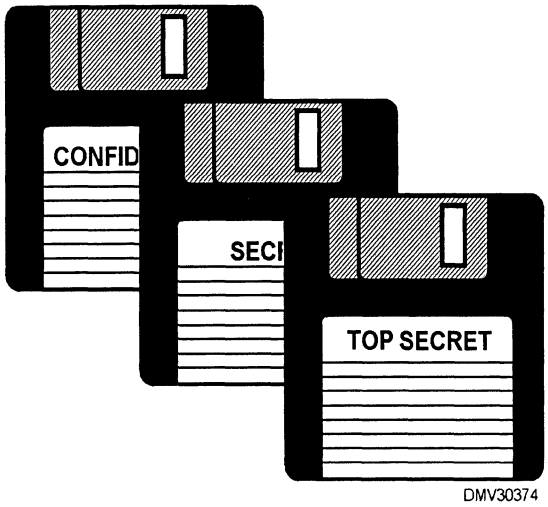


Figure 8-1.—Classification markings clearly marked on disk labels.

Media disposition

Magnetic media, such as disks, eventually wear out or become damaged. If disks contain classified material, degauss or erase them before destruction. Handle and dispose of printer ribbons and carbon papers used to print/transfer classified information according to the highest classification level of the data printed by that ribbon or carbon. Follow the requirements and instructions outlined in the *Department of the Navy, Information and Personnel Security Program Regulation,* OPNAVINST 5510.1.

Viruses

Introduction

Just as humans are infected by ingested viral agents, so, too, are computers vulnerable to suspect data entered into the CPU. Suspect data is referred to as viruses. Left untreated, viruses seek and destroy data and may cause eventual collapse of the infected computer system.

Viruses

Viruses are data parasites written and released into programs with the intention of creating mahem. These parasites seek data stored in hardware and software (hosts) to infect or destroy. Some viruses infect every file, others infect only applications software, data files, or operating system software. Viruses duplicate and reproduce themselves into legitimate files and may spread rapidly or sit in the system for months before attacking. Viruses may activate when you initially start or boot up the computer or immediately upon entering the system.

Virus transmission

Copying or erasing infected floppy disks, downloading data from infected computer bulletin boards, or accessing programs or networks via modems are all ways of acquiring viruses.

Virus identification

Sudden and unexplained pictures or messages appearing on the monitor screen or the disappearance of programs and data may indicate the presence of viruses. Investigate any unusual behavior in computer performance. New viruses appear regularly and may take any shape or form.

Virus elimination

Antivirus programs are software programs designed to detect and eliminate viruses. Some antivirus programs require activation each time you want the program to seek and destroy viruses. Other antivirus programs, called "terminate-and-stay resident (TSR)" programs, remain in ROM automatically activating each time you boot up or insert disks into the computer. Installing TSRs into the hard drive of the computer may interfere with software programs already in memory. If this happens, removing the antivirus program should return the software to normal.

Continued on next page

Viruses, Continued

Virus protection

To prevent or reduce exposure to computer viruses, take the following precautions:

- Use only commercially available disks.
- Avoid exchanging disks with another SYSOP.
- Limit the number of computers your computer contacts (via modem or floppy disk exchange).
- Back up your disks regularly as you work to minimize the amount of data lost should you contract a virus.
- Write-protect disks whenever possible. The write-protect feature locks up disks preventing inadvertent changes by virus infection.
- Use antivirus programs regularly and when borrowing disks from other computer users.
- Scan the hard drive weekly and create infection-free back-up disks.

Is it important to guard against viruses, to find and destroy viruses, and to disinfect any disk that may be infected also. Simple precautions minimize virus infections. Viruses are easier to prevent than to isolate and treat.

As good as antivirus programs are, they require updating to stay abreast of new viruses. The fear of virus infections should not cripple your interaction with computers and software so long as you invest in good antivirus software and use precautions.

Common Software Features

Introduction

The variety of software programs used by the Department of Defense and the U. S. Navy make it impractical to discuss each program and undesirable to select only one program for inclusion in this chapter. There are, however, several features and options common to a majority of software programs. There is no attempt to identify individual programs in this section. Your software may or may not have any of these features.

Cursers and pointers

Cursers and pointers indicate a current position on the screen. Common cursers are blinking horizontal or vertical bars and are usually moved by the keyboard or mouse. Pointers are usually associated with the mouse and appear as arrowheads, trailing arrowheads, crosshairs, hourglasses, I-beams, prohibiting circles, hands, and sometimes bars and cross hairs with directional arrows.

Figure 8-2 shows a variety of common cursers and pointers.

Figure 8-2.—Common cursers and pointers.

BLINKING BAR: A blinking, heavy-weighted bar usually precedes text. Its place is to the left of the next character. A mouse (rapid action input device) pointer may also appear on the screen, but as a non-blinking I-beam. The I-beam moves as the mouse moves. The blinking bar moves by operating the keyboard, curser control keys, or by repositioning the bar with the mouse and clicking to anchor it in place.

ARROWHEADS and TRAILING ARROWHEADS: Arrowheads appear when you use a mouse to move around the screen in graphics software programs. The tip of the arrowhead must touch the section or item you intend to alter. If the image of the arrowhead tail lingers, it is said to be trailing.

CROSSHAIRS: Crosshairs representing the curser or pointer appear when using the draw feature of graphics programs or desktop publishing programs. Crosshairs allow more precise positioning by focusing on a picture element (pixel).

Continued on next page

Common Software Features, Continued

Cursers and pointers (Continued)

HOURGLASSES: The appearance of an hourglass on the monitor screen indicates that the computer is accessing memory or a function. While the hourglass is displayed, the keyboard or mouse is inoperable. Hourglasses with an arrow indicate the computer is working, but you are free to access another function. The hourglass or hourglass with arrow disappears when the computer completes the requested activity.

DIRECTIONAL ARROWS on bars or cross hairs: Directional arrows attached to bars or cross hairs indicate that the curser may shift selected items or lines in the direction of the arrows to another position in documents. Directional arrows also allow you to resize information windows.

PROHIBITING CIRCLES: Circles crossed diagonally by a line that may or may not have an additional icon let you know that the application or function you request is prohibited.

HANDS: Hands or question marks indicate that clicking in a particular space, phrase, or image accesses the HELP feature of the software program. On the Internet or web pages, these helpers indicate internal and external links to web sites.

Icons

Icons are small graphic images representing functions or applications of software. Icons eliminate memorizing multiple keystrokes by replacing the keystrokes with pictures. Icons speed up selection and execution of options. The ability of software to use graphics to make software more user friendly is part of the software graphical user interface (GUI).

Screen displays

Screen displays are the entire monitor face capable of showing information. Some screens show only a portion of text requiring the viewer to scroll. Screens that show a portion of the whole image are difficult to work with and make it hard to develop a feel for page aesthetics. Monitors having more pixels and larger working monitors may allow you to see exactly how pages will appear when printed. Monitor resolution is adjustable. On-screen information appears and disappears through what are called windows.

Continued on next page

Windows

Windows are enclosed areas on the screen and are called application windows. Within the application window, other open windows display the file that is currently open, the features available to change the file, the software tools to change the file, and the file itself. Clicking into features and options opens windows that contain all the information required to access software applications. Multiple windows can appear side-by-side, made smaller or larger, or be temporarily placed elsewhere on the screen until required.

Program and file name

A window called a *title bar*, usually located across the top of the screen, displays the name of the software program and the particular file currently open. Preceding the file name is a designator indicating which drive or disk the file is on.

Figure 8-3 shows a program and file name (volume 3, chapter 8) in the hard drive (C:) in a window at the top of a screen.

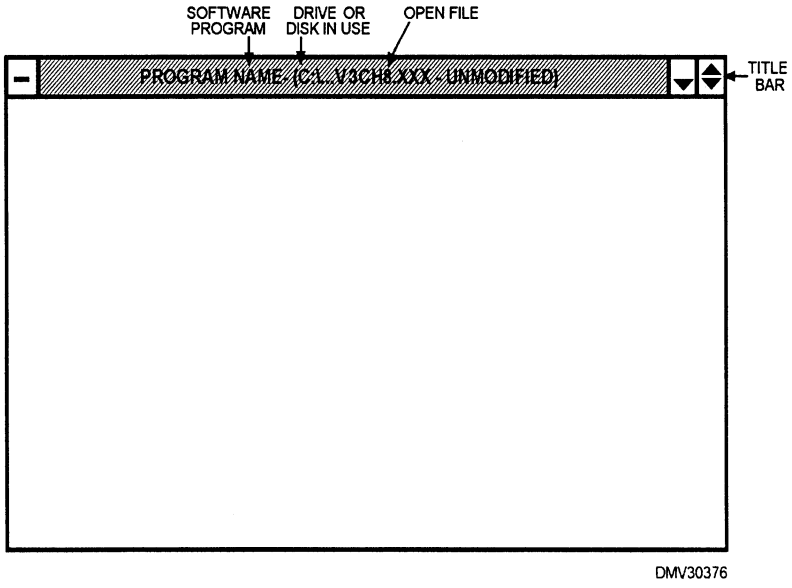


Figure 8-3.—The onscreen title bar.

Continued on next page

Minimize and maximize

Minimizing windows reduces the image to a preset smaller size. Maximizing windows fills the screen monitor with the document image and may make menus and toolbars disappear altogether.

Figure 8-4 shows the position of the minimize and maximize features.

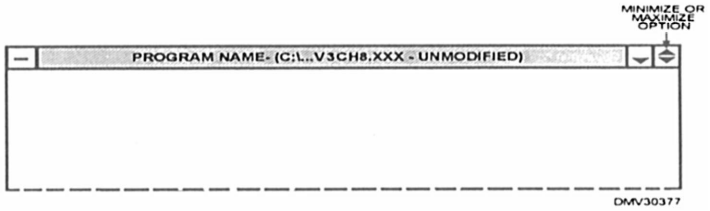


Figure 8-4.—Locating the minimize/maximize options on a windows 3.X program.

Close or exit

To close or exit a program, click the mouse on the minus (-) or (x) symbol in the window displaying the software and file name. This feature closes the program quickly.

Menus

Menus are lists of features that appear at the top or the side of the monitor screen. These features control document parameters. Common features are FILE, EDIT, VIEW, INSERT, FORMAT ,TABLE, GRAPHICS, TOOLS, WINDOW, and HELP.

Figure 8-5 shows how menus may appear in the window across the top of monitor screens.

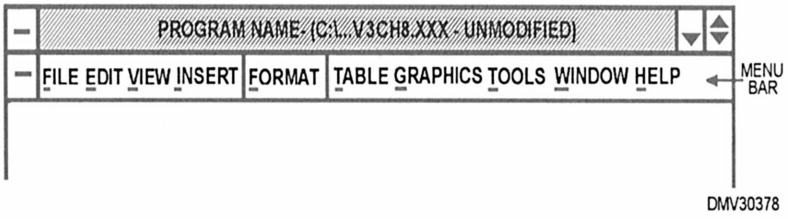


Figure 8-5.—Menus.

Continued on next page

Menus (Continued)

Clicking the mouse on menu features reveal document parameter options available to you. This list of options is called a *pull-down menu.* The options in this feature appear as lists. Clicking the mouse on an option in a list changes the document. To return to the document, click the main menu item.

Figure 8-6 shows a pull-down menu for the FORMAT feature.

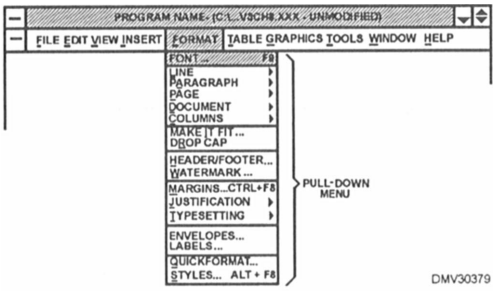


Figure 8-6.—Format feature pull-down menu.

There are additional pull-down menus to further define document parameters you want to change.

Figure 8-7 shows the menu feature FORMAT, the first pull-down menu, and the second pull-down menu.

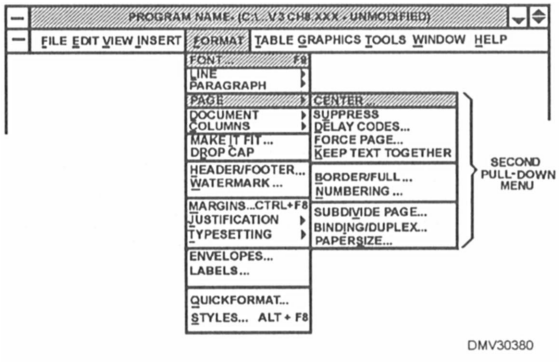


Figure 8-7.—A second pull-down menu.

Continued on next page

Menus (Continued)

Further defining document changes leads you to a prompt that specifically addresses those changes you want to make. The window that prompts you to enter changes is called a *dialogue box.* Some dialogue boxes offer an options list that appears similar to pull-down menus. This options list inside the dialogue box is called a *drop-down list.* The dialogue box accepts the changes you select after clicking OK. If you accept the changes, the document immediately reformats reflecting the changes.

Figure 8-8 shows the dialogue box to change page numbers both in number ‘structure and page position.

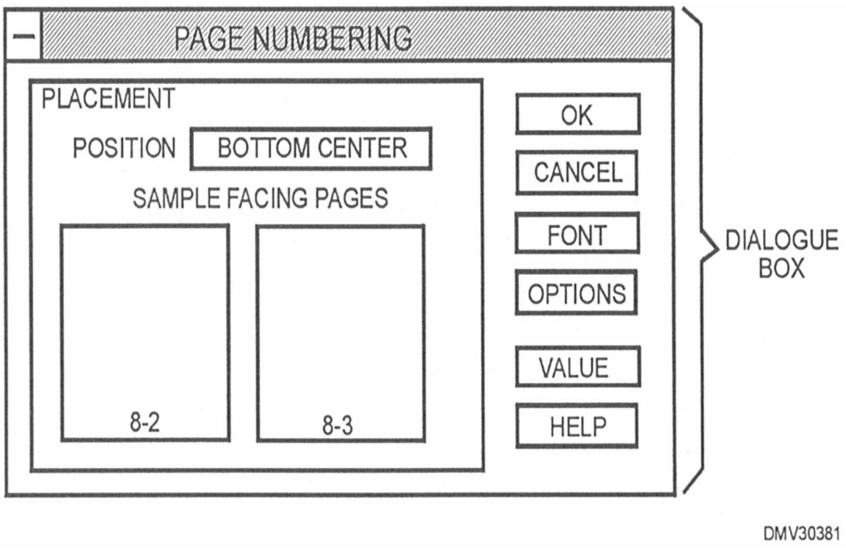


Figure 8-8.—A dialogue box for page numbering.

Continued on next page

Menus (Continued)

You may click into menu features and find that some options on the list in the pull-down menu are dark and some are greyed out. Those features that appear 'dark are currently available to you for use. Greyed out features are not available or are inactive options you cannot access.

Figure 8-9 shows the EDIT feature with greyed out and dark options.

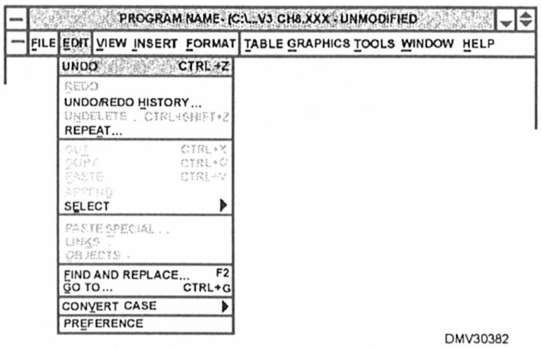


Figure 8-9.—Greyed out and dark options of the EDIT option.

Menu feature options terminating in three dots (. . .) require additional information from you before activating. For example, one option in FILE is SAVE. Clicking the SAVE (notice the absence of dots) option saves data in the hard drive, but clicking SAVE AS . . . requires you to indicate where you want the data to store or to indicate a different file name. If you did not name a document before clicking SAVE, the screen prompt automatically appears as SAVE AS . . . awaiting your input for the file name.

Figure 8-10 illustrates the difference in SAVE and SAVE AS . . . options in the FILE feature.

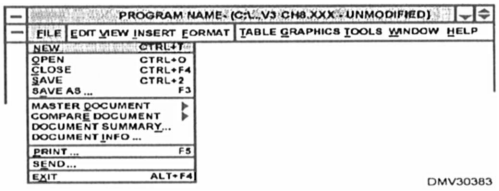


Figure 8-10.—The difference between the SAVE and SAVE AS... options.

Continued on next page

Menus (Continued)

Some pull-down menus also have indicated keystroke sequences on the right side. These are the keystrokes and sequence code to access the function if you use a keyboard instead of a mouse.

Figure 8-11 shows the function codes in the FILE menu to access the function by keystroke.

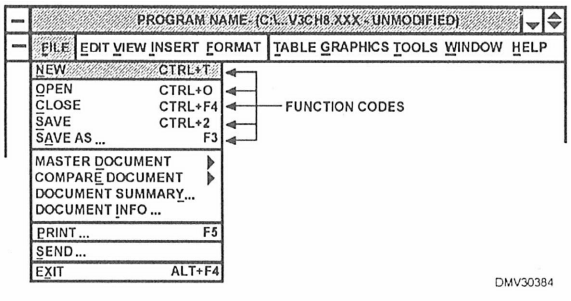


Figure 8-11.—Listed keystrokes as an option to access function codes.

Other symbols used in feature lists are check marks or bullets. Check marks show which option is selected. For example, look at the VIEW feature. A check mark next to TOOLBAR displays the toolbar on the top or side of the screen image. Clicking again on VIEW activates the option.

Figure 8-12 shows VIEW with the TOOLBAR option selected.

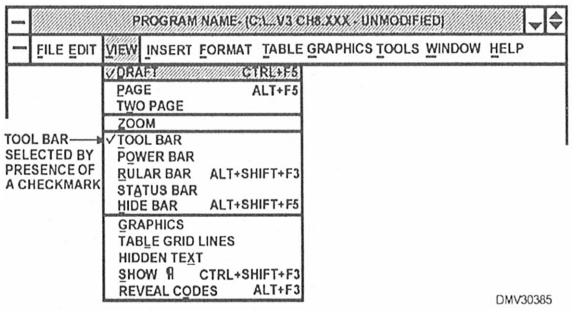


Figure 8-12.—The toolbar selected with the presence of a checkmark.

Continued on next page

HELP

HELP is a feature that provides step-by-step instructions in some aspects of the software program installed on the computer. HELP displays appear on the screen and prompt you through selected functions. You may also print the HELP instructions to hard copy printouts. To make HELP displays disappear from the screen, click the CLOSE box. Most software programs have HELP features.

Figure 8-13 illustrates how HELP features lead SYSOPs through unfamiliar procedures.

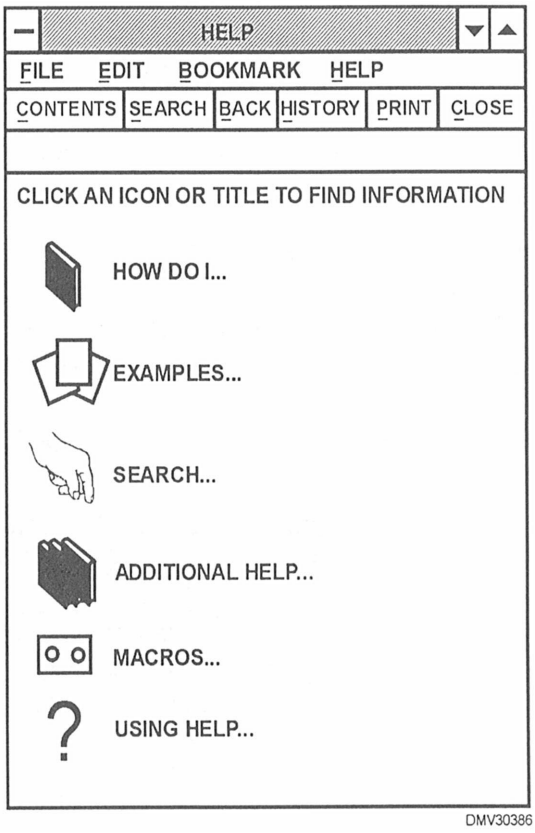


Figure 8-13.—HELP features.

Continued on next page

Scroll bars

Scroll bars are areas on the side and bottom of a monitor screen display that allow you to rapidly scroll or run through documents or software options by clicking and holding the mouse on the arrow pointing in the direction you want to travel. Scroll bars appear when there is more information or options than can be visibly displayed on the monitor. Inside the scroll bar is a square or box that indicates approximately where you are in the document.

Figure 8-14 shows a monitor screen with scroll bars at the side and bottom of the display.

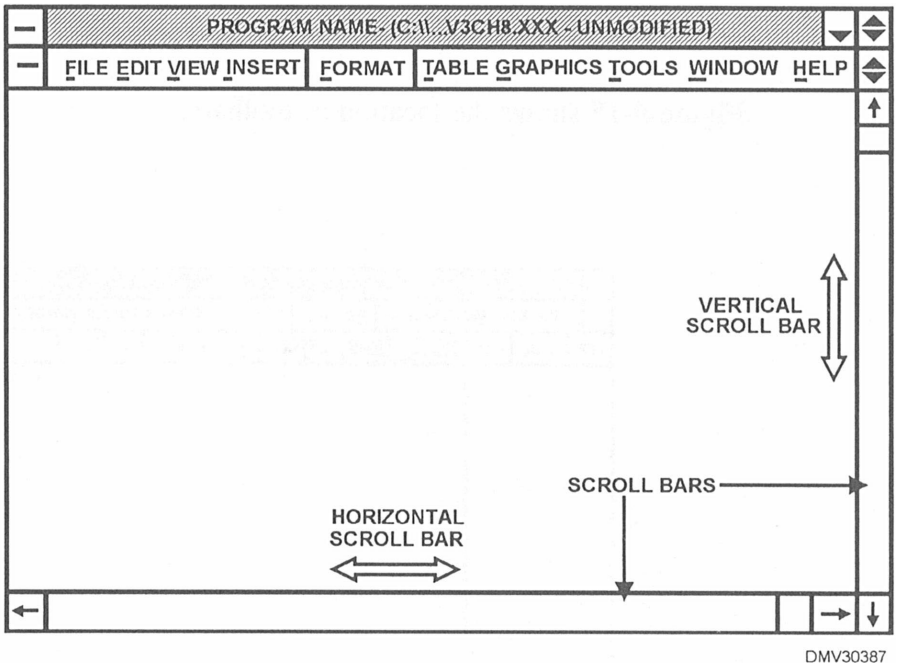


Figure 8-14.—Scroll bars.

Common Software Options

Introduction

Just as software programs standardize popular features, so, too, are options becoming standard. Popular options reoccur in many software programs. This segment discusses common software options without reference to individual programs. However, we do refer to some word processing software options in these discussions.

Toolbars

Toolbars are a collection of options displayed on the top or sides of monitor screens. The SYSOP may elect to display or not to display toolbars by clicking the pull-down menu under VIEW and placing or removing a check mark to the left of Toolbar. Toolbars consist of common options such as Font Face, Font Size, Justification, Line Spacing, Table Create, Column Define, Zoom, Font Attributes, Bold, Italicize, Underline, and Symbology. Software may also have program specific options on a separate toolbar that enable the SYSOP to maximize using the software.

Figure 8-15 shows the location of toolbars.

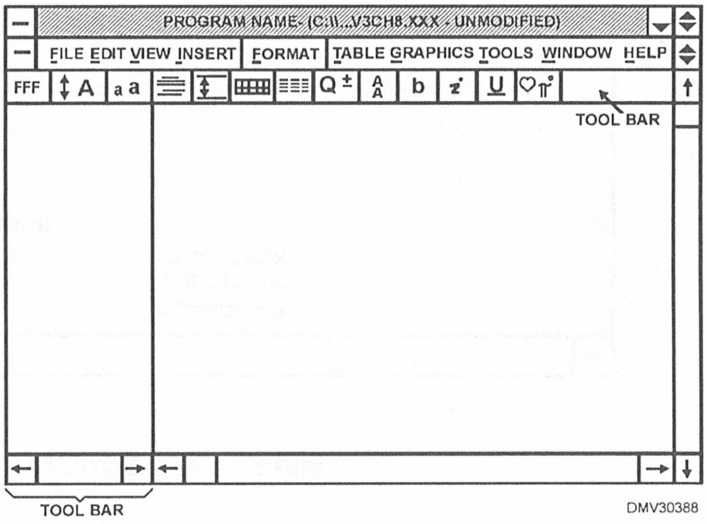


Figure 8-15.—Typical onscreen locations for toolbars.

Continued on next page

Common Software Options, Continued

Font-related options	Font-related options allow SYSOPs to change attributes in any font the software offers. Font attributes include letter style and size. Font Face refers to letter style and Font Size refers to letter size. Select Style accesses preset characteristics that define where the text appears on the page. For instance, using Chapter Heading under the Select Style option produces. large, bold text typical of chapter titles.
Justification	Clicking on the button for Justification displays a small pull-down menu offering flush left or right, centered, or full justification. Selecting flush left or right aligns text on the left or right side margin. Centering text centers the line of text between the margins.
Line Spacing	Line spacing controls the amount of space between lines. Similar to typewriters, options include single spacing, 1 ½ spacing, and double spacing.
Tables and columns	Since tables and columns are often embedded in text, toolbar buttons offer the SYSOP a quick and easy method for creating tables and columns.
Zoom	The Zoom option allows you to look at document pages at different percentages of magnification or as a full page. This is helpful when page aesthetics are critical as in Welcome Aboard brochures and Change Of Command booklets or when you must fit a lot of information into a set space.
Bold, italics, and underline	Toolbar buttons marked “B,” “I,” and “U” offer the options of bolding, italicizing, and underlining text. To access these attributes, select the text, move the mouse to the appropriate toolbar button, and click. Deselect text before continuing in the document. If you fail to deselect, the text continues to bold, italicize, or underline.
Symbology	Scientific, mathematic, linguistic, and graphic symbols are available by using the Symbology toolbar button. The Symbol toolbar button prompts you through the sequence of selecting and inserting symbols.

Common Software Commands

Introduction

Software is developing a common language in the form of commands.

Commands

Commands are words recognized by the computer to access functions. Certain common commands appear in most software packages. You may access commands by pulling down the menus of the software features.

FILE feature

The FILE feature offers the commands of NEW, OPEN, CLOSE, SAVE, and PRINT. Clicking on a command either executes the command or offers a dialogue box.

NEW: Enter the NEW command when you start a new file. A dialogue box may appear to ask you to select a format for the new document.

OPEN: Access an existing document by clicking the command OPEN. A dialogue box appears prompting you to select from a file of existing documents. Once you select the document you want to open, click on the file name, and OK or double click the file name to open the file.

CLOSE: To close or exit a file, click CLOSE. A prompt appears that should ask if you want to save the document. Selecting the desired option automatically executes the function and closes the file.

SAVE: To save a file, click SAVE. The computer automatically saves the data to whatever drive you specify, hard drive or floppy disk and prompts you to name the file before saving it. To save data to disks or alternate hard drives in another format or to rename a file, click SAVE AS. . . and enter the letter designator of the disk or alternate drive.

PRINT: To print hard copies of an open document, click PRINT. A dialogue box appears asking if you want the entire document or a portion of the document, and how many copies you require.

Common commands are not the only commands you will see offered the FILE pull-down menu but, other commands may be program specific. Familiarize yourself with the software in your computer.

Continued on next page

EDIT feature

The EDIT features offers commands like UNDO, CUT, COPY, and PASTE.

UNDO: The UNDO command deletes the last command given returning the document to its previous configuration.

REDO: REDO replaces data deleted by the UNDO feature or delete command.

CUT: CUT commands isolate a portion in the document and removes it. In effect, it cuts the portion from the text and moves it into the electronic clip board or scrapbook until you recall it later in the document or in another document. You may also delete the information entirely. The clip board empties when you exit the program or cut or copy new text.

COPY: The command COPY copies selected data. The information remains in the original document with a copy of the data placed in the clip board or scrapbook until the SYSOP requires it. Copied data may be repeated later in the same document or moved to another document. Again the clip board empties when you exit the program or cut or copy new text.

PASTE: PASTE is the command given when the SYSOP wants to recall data that has been cut or copied to the clip board in the document or into another document altogether.

Again, these commands are common to a majority of software programs. Your software program will have many other commands available.

Figure 8-16 shows the EDIT feature pull-down menu.

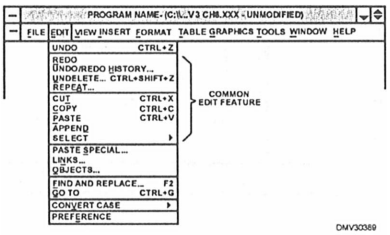


Figure 8-16.—Common EDIT features.

Continued on next page

VIEW feature

Two of the most common commands in the VIEW feature are ZOOM and TWO PAGE.

ZOOM: ZOOM is a command that tells the computer to show more or less of the document page. ZOOM commands have preset percentages of magnification ranging from 25% to 200%. Some ZOOM commands allow the SYSOP to select the percentage of document to display. The ability to zoom into or out of a document is helpful when inserting graphics or copyfitting text.

TWO PAGE: In most instances, you will be working on documents in the PAGE mode where only the current page is displayed. The TWO PAGE command reduces the document image allowing two facing pages to appear on the screen simultaneously. This is desirable when you have to create Welcome Aboard or Change of Command brochures and need to view the pages side-by-side. Clicking on PAGE or TWO PAGE immediately executes the command without further prompting.

Figure 8-17 shows the TWO PAGE command for a multiple page document.

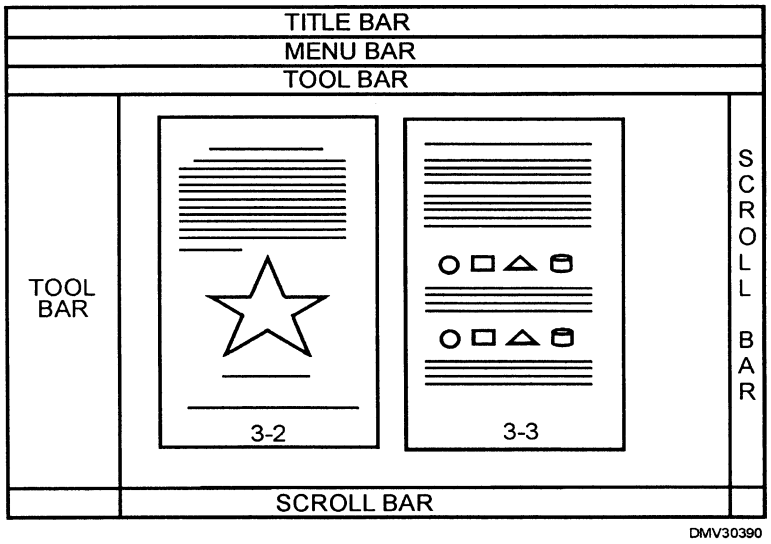


Figure 8-17.—Two pages displayed on screen simultaneously.

Continued on next page

TOOLS feature In the TOOLS feature are vital commands such as SPELL CHECK and THESAURUS.

SPELL CHECK: Clicking the SPELL CHECK command produces a dialogue box asking if the entire document or a portion thereof should run through SPELL CHECK. SPELL CHECK verifies the spelling of each word in the document. If it detects an error, SPELL CHECK offers alternate spellings or words for you to preview. Once you determine the correction, click to replace that word in the text. Run every document through the SPELL CHECK command. SPELL CHECK, however, cannot tell if a word is incorrectly or correctly used. Continue to manually proofread text before declaring a job finished.

Figure 8-18 shows a typical SPELL CHECK dialogue box.

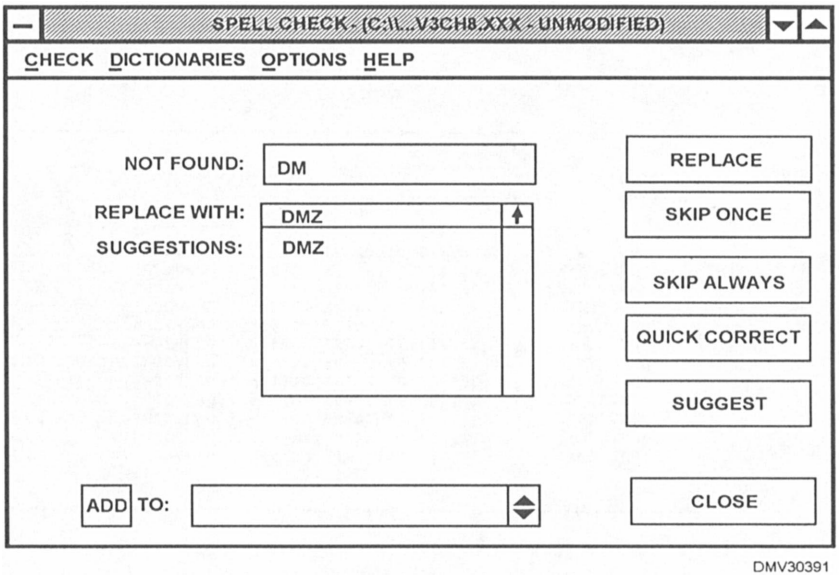


Figure 8-18.—A typical spell check dialogue box.

THESAURUS: The THESAURUS command offers synonyms to reduce repeating the same word or words. For individuals with limited vocabularies that often write text, a thesaurus is invaluable.

Directories and Subdirectories

Introduction

Data stored on disks requires a system of retrieval. Computers use hierarchal systems that go from general information in directories to specific information in subdirectories. Carefully plan the organization of information on disks and hard drives.

Directories or files

Directory files are groups of files that are extensions of the list file. The main file or directory, called the. *root directory or parent directory,* is distinguished by a backslash (\). Other directories have file names followed by the abbreviation "dir" and are sometimes called *child directories.* Directories are limited in the number of files they can hold, which necessitates creating subdirectories.

Figure 8-19 shows directories or files of general data.

```
09-30-97  03:18p              Directory C:\WP51\DOC\*.*
Free: 74,334,208

     Current      <Dir>                       ¦ ..   Parent       <Dir>
 MC       .        2,616 01-02-97 09:41a ¦ ODMV1CH1.        76,366 07-20-95 03:35p
 ODMV1CH2.        99,135 07-20-95 03:33p ¦ ODMV1CH3.        36,941 07-20-95 03:36p
 ODMV1CH4.        75,066 07-20-95 03:37p ¦ ODMV1CH5.        57,737 07-20-95 03:38p
 ODMV2CH1.        15,955 07-20-95 03:39p ¦ ODMV2CH2.        16,305 07-20-95 03:41p
 ODMV2CH3.        16,451 07-20-95 03:42p ¦ ODMV2CH4.        16,962 07-20-95 03:43p
 ODMV2CH5.        15,814 07-20-95 03:44p ¦ ODMV2CH6.        24,411 07-20-95 03:45p
 ODMV3CH1.        21,782 07-21-95 11:09a ¦ ODMV3CH2.        17,503 07-21-95 11:32a
 ODMV3CH3.        20,881 07-21-95 01:13p ¦ ODMV3CH4.        17,241 05-06-97 09:27a
 ODMV3CH5.        20,097 07-24-95 08:59a ¦ ODMV3CH6.        22,245 07-24-95 09:21a
 ODMV3CH7.        24,199 07-24-95 09:55a ¦ ODMV3CH8.        20,558 07-24-95 10:06a
 ODMV4CH1.        28,444 07-24-95 11:05a ¦ ODMV4CH2.        20,902 07-24-95 11:22a
 ODMV4CH3.        17,717 07-24-95 01:22p ¦ ODMV4CH4.        14,510 07-24-95 01:28p
```

DMV30392

Figure 8-19.—A subdirectory from C:Drive.

Continued on next page

Directories and Subdirectories, Continued

Subdirectories or folders

Subdirectories or folders are files that have specific purposes or relationships. Subdirectories can contain anything and may become very large. Use subdirectories when several people use one computer and need to keep separate data files. Subdirectories are also used to keep different types of documents together or to separate files by commands.

Figure 8-20 shows how subdirectories or folders of specific data form a hierarchal system called a *directory tree.*

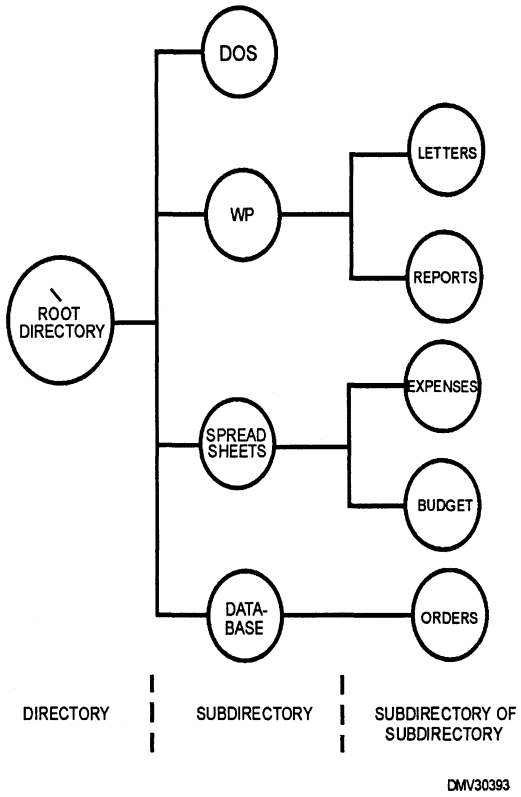


Figure 8-20.—Directory trees.

Continued on next page

Directories and Subdirectories, Continued

Naming a file or folder

The name of directories or files and subdirectories or folders should reflect information that identifies the contents of the document. A file name consists of eight characters and may have a suffix or three-character extension after a period. The three-character extension may indicate the type of document in the file. For example, ART indicates that the file contains artwork rather than text (TXT). The three-character extension may also indicate the format of the document. Do not use punctuation in file names. *Use* the *Department of the Navy, Standard Subject Identification Codes (SSIC), SECNAVINST* 5210.11, to assign file names with some uniformity.

File listings

You can access files in directories or subdirectories by displaying the list of files on the monitor screen or by printing hard copies. Store hard copy lists of the directory with the disk. File lists show the name of the file, how many bytes in the file, and the date of creation or modification. When the list of files are on-screen, options appear that allow you to OPEN, RETRIEVE, DELETE, MOVE/RENAME, PRINT, LOOK, OTHER DIRECTORY, COPY, FIND, or NAME SEARCH files.

OPEN: Opening files displays the document onscreen and allows you full editing capabilities in the file. When editing is complete, save the file before closing it or the changes may not be saved. A prompt to save before closing a file normally appears on screen.

RETRIEVE: Retrieving a document displays. the information on the screen and allows you to modify data. Save all modifications before closing the file or the document may not save the changes.

DELETE: Selecting DELETE will remove the file from the root directory. If files contain subdirectories, a prompt informs you that the file cannot be deleted without deleting the subdirectories first. Many programs will ask you to confirm your request to delete a file.

MOVE/RENAME: Use the MOVE/RENAME option to move a file to another disk or drive or to rename a file.

PRINT: Selecting PRINT from the LIST FILE without selecting a particular file prints the file list itself. To print directories from the root directory, you must select them.

Continued on next page

Directories and Subdirectories, Continued

File listings (Continued)

LOOK: LOOK allows the system operator to view the selected document on the screen. You cannot make changes or modifications in this mode.

OTHER DIRECTORY: Using the option OTHER DIRECTORY elicits a prompt to indicate the desired directory. Once the computer knows which directory you desire, the file list for that directory appears on the screen.

COPY: To copy a file to another disk, select the file with the cursor and click on the COPY option. A prompt asks to what disk or drive to copy the information.

FIND: FIND and NAME SEARCH are very similar. If you know the document name or several key words or phrases, the software can search files until it finds a match.

NAME SEARCH: To find a particular file, some programs are capable of searching for files in several ways. Entering a few letters from the file name causes the program to look for any file name with those few letters. You can search by date or file/folder if you can remember the date you originally created the document or to which file or folder you saved the document. Some software programs are capable of searching for phrases within the text of documents.

Purging files

Purge old files from your working copy disks and hard drives weekly. Dispose of obsolete files by deleting them. Move infrequently required documents to finished media disks or disks set aside for archival purposes. Removing obsolete or excess files from working copy disks and hard drives reduces the time it takes the computer to scan and retrieve files speeding processing time.

Archiving

Archiving is saving infrequently used data on finished media disks or disks reserved for information only occasional required. For example, the ships Watch, Quarters, and Station Bill that is periodically updated and circulated would be better stored on finished media disks than on hard drives.

File Formats

Introduction

No one software program offers every option and you may want to move graphic files from one program to another to use other options. Proper file format is important if you plan to merge graphics into other software programs. Review software owner/operator manuals to identify formats the software supports for importation and exportation. Your graphics will not display or print if you save files in incompatible file formats.

File formats

File formats are machine languages that save each binary digit or bit in a file according to special codes that tell the program how to arrange and present the information. Special codes for one program are not necessarily the same special codes for other software. Two common ways files are saved to disks are by vector and raster bit maps.

VECTOR-BASED: Vector-based drawings or object-oriented graphics are plotted by a series of points that define paths for lines to follow. The points are the result of mathematical formulation and most vector-based software automatically recalculates subsequent changes. For this reason, vector-based drawings are simpler to edit than raster-based images. Vector images are defined by lines, shapes, color or fill pattern, and objects. Vector-based graphics printed or viewed on low resolution printers and screens, curves and circles appear mechanically awkward or jagged. The term for jagged edged lines is *pixilated.*

RASTER-BASED: Raster-based images are images created pixel by pixel within a matrix. Raster-based software automatically determines when and to what number to reduce pixels in a matrix. Vector-based bit maps can be "rasterized" or converted by a raster image processor (RIP) to raster bit maps. The purpose of conversion is to ensure reliable transport into the publishing software by dramatically increasing the dots per inch (dpi) resulting in very high resolution. Rasterizing images removes the jagged edges often associated with vector graphics reproduced at low resolution (lower dpi). Subsequent editing in raster-based software is often difficult and may require re-converting to vector-based software.

Continued on next page

File Formats, Continued

Saving file formats	The format graphics are saved in affects the resolution quality of the final product. Files saved in low-resolution do not produce professional quality graphics. Files saved in high-resolution file formats require software program compatibility to maintain high resolution or increase to very high resolution. Common file formats are the American Standard Code for Information Interchange (ASCII), the encapsulated postscript file format (EPS or EPSF), the tag image file format (TIFF), the raster image file format (RIFF), and the graphic images format (GIF). There are some file formats that are platform specific such as Amiga ILF/ILBN and Macpaint.
American Standard Code for Information Interchange (ASCII)	The American Standard Code for Information Interchange (ASCII) is a generic text-only format without special coding for attributes such as bolding, underline, and italicizing. You can open files saved in ASCII in any other program so long as you specify the format when opening the file or issue a special import command. ASCII does not handle graphics files.
Encapsulated postscript file formats (EPS or EPSF)	Encapsulated postscript file formats (EPS or EPSF) save graphics as high resolution images in color or black and white. EPS files consume more disk space than other file formats because they contain information required for color separation. Images saved as EPS files are particularly suited to high quality reproduction or commercial printing. EPS or EPSF is a vector-based format.
Tag Image File Format (TIF or TIFF)	Tag image file formats or TIFF is a common format for saving bit-mapped graphics. You can save any scanned line art or grey-scale halftone image in TIFF and import/export into desktop publishing programs or other graphics software for further manipulation. The TIFF file format is a vector-based format. TIFF is less capable as a format for color images than EPS.
Raster image file format (RIF or RIFF)	Raster image file formats (RIFF) is a PC image-editing program similar to TIFF in very high resolution. Vector-based formats may be converted to RIFF by a RIP.

Continued on next page

File Formats, Continued

Graphics images file format (GIF or GIFF)

GIF or graphic images file formats are display bit maps without the high resolution required for editing. GIF is used for display and exchange among users in subscription networks connecting vast networks of computers such as the Internet and the world wide web.

Joint photographic experts group (JPEG or JPG)

JPEG or JPG is a standardized image compression mechanism written by the Joint Photographic Experts Group for maximizing file compression of files intended for use as a Usenet or world wide web photo format. JPEG works best with full-color or grey-scale images such as photographics and continuous-tone art. JPEG has difficulty reproducing sharp lines and extreme contrasts. JPEG files also display a loss in image quality with subsequent conversions.

File format suffixes

Common three-letter file format extensions attached to file names include the suffixes in the following chart:

Format	Suffixes
American Standard Code for Information Interchange (ASCII)	.txt
Encapsulated Postscript File Formats (EPSF or EPSF)	.eps
Graphics Image File Format (GIF or GIFF)	.gif
Joint Photographic Experts Group (JPEG or JPG)	.jpg
Raster Image File Format (RIF or RIFF)	.rif
Tagged Image File Format (TIF or TIFF)	.tif

File compression

When documents or images require more storage space than the disk has, compress the file to fit. Compressing files is a way to store back-up material, free hard drive space, and save time transferring files. Many programs are able to compress files and there are specific file compression software programs available. Compressed files must be expanded before use. Compressing and expanding files does not affect resolution. File compression is sometimes referred to as stuffing and unstuffing.

Word Processing Software

Introduction

Many computers in the Navy have some sort of word processing software installed. For DMs, word processing software composes flawless text for subsequent reproduction. Because there is a variety of text-handling programs in several different versions in the fleet, no attempt to address specific programs is made in this training manual. You must become familiar with your work center computer and the word processing software installed on it.

Word processing programs

Word processing programs create flawless documents by using extensive and sophisticated editing features that typewriters cannot offer. Editing features distinguish one word processing program from another. No one program contains all features. As word processing programs evolve, however, certain features become common.

Word processing software manuals

The most valuable source of reference for your computer and software package is the owner/operator manual. These manuals are meant to be used for reference daily. Keep the manuals handy. It takes a lot of experience before you can disregard the manual without losing computer capability.

Word processing software features

Word processing software features are standardizing as the medium evolves, but, part of evolution is the creation of and streamlined access to new features. Features that once took several keystrokes to access now have their own icon on toolbars and require only that you point and click the mouse.

Document formatting features

Before entering text into documents, set document parameters regarding margins, justification, text centering, setting text flush, setting headers, footers, endnotes, and page numbers. Define a document before you begin. Failure to define document parameters creates major control problems during corrections or revisions. Modifying documents with undefined parameters results in text splattered across the page and irregular margins. This is frustrating and confusing when you are trying to make corrections.

Graphics Software

Introduction

Software programs that are highly regarded for text-handling abilities may not be appropriate software for handling artwork or images. To achieve the flexibility and resolution required to create good graphics, you need graphics software programs. Since so many graphics software programs are used in the Navy; this section addresses them only in general terms.

Graphics software programs

Graphics software programs are intended primarily for the creation and modification of graphics images. The three types of graphics software programs are image-creation (drawing, animation, drafting, and painting), image-editing (photographic), and image-presentation (briefing or training) programs.

Graphics software program manuals

Graphics software programs have so many features and options that an owner/operator manual is invaluable. Study software manuals and complete any exercises and recommended applications. Keep software manuals near computer work stations for easy reference.

Graphic software programs memory

Memory requirements for graphic software programs exceed those for text-handling programs. Memory chips on CPUs store bytes of information in kilobyte (KB), megabyte (MB); or gigabyte (GB) increments. Random Access Memory (RAM) memory chips determine what programs your computer is capable of running and how much information you are able to store. Graphics software requires more RAM than text programs. When purchasing software to increase graphics capabilities, compare the memory capacity in the CPU to the memory requirements of the intended purchase. Add more memory chips to the CPU if required to handle the new software.

Image-creation programs

Image-creation programs are programs that allow the SYSOP to create and manipulate images. Image-creation software programs include draw, paint, animation, and drafting software programs. The images may be initially scanned into memory or created solely by using options available in the software program. Drawing and painting software is generally raster-based and animation and drafting programs are vector-based programs.

Continued on next page

Graphics Software, Continued

Image-editing programs

Image-editing programs are used primarily with preexisting images such as pictures and photographs, scanned into memory for manipulation. Image-editing software shares many of the features and options available in image-creation programs with higher resolution and greater pixel manipulation. Image-editing programs often have greater selections of blending tools and stylizing filters than image-creation programs.

Image-presentation programs

Image-presentation programs offer cookbook solutions to the task of preparing information for presentation in briefs or in training environments. You select slide or viewgraph formats from menus in memory and plug information into it. You may import photographs and illustrations through scanners or select from stocks of copyright-free artwork held in memory as clipart. You program how the image appears and disappears from the screen and for how long the slide remains on the screen.

Common graphics software features

Features common to graphic software applications include the use of layering, movement tools, auto-trace tools, shape tools, rendering tools, blending tools, and stylizing filters. Each software program has its own set of tools. Your software program may have any or all of the following listed tools and features, You may have additional features that are program or platform specific but, whatever features and tools your software offers, get to know and understand how to use them.

Layering

Layering is creating art in stages or on electronic overlays. Every element of a design is placed on separate layers. Because the number of layers can become excessive, it is a good idea to combine or group layers that contain small design elements. Any layers so grouped may also be ungrouped. Most graphics programs create art in multiple layers with the exception of painting programs, which may use only one layer. Working in multiple layers gives you complete control of every drawing element and is convenient when preparing color separation work or isolating segments for changes. The disadvantage of multiple layers is that it complicates the creation process by making it difficult to select the appropriate layer to change and to assess how changes made affect previous and subsequent layers.

Continued on next page

Graphics Software, Continued

Movement or select tools

Movement or select tools extract and move image segments into the electronic clipboard or scrapboard for later recall and repositioning. Movement tool icons may resemble lassos (rope) or marquees (rectangle). Movement tools select pixilated images with some surrounding white space or white space enclosed within the pixilated image.

Isolating tools

GROUP, UNGROUP, and ISOLATE are forms of movement or select tools that allow you to separate design elements for detailed alterations.

GROUP: GROUP combines design elements from different layers onto one layer. Reducing the number of layers in illustrations simplifies image construction and occupies less memory space.

UNGROUP or ISOLATE: UNGROUP or ISOLATE isolates design elements for further manipulation. At times, you may have to ungroup elements, edit, then regroup them to successfully modify illustrations.

Auto-tracing tools

Auto-tracing tools are quick ways to repeat images without redrawing them. Auto-trace tools automatically plot vectors of traced images and convert them into drawn lines. You may have to refine and sharpen the traced lines before using them in your artwork.

Shape tools

Shape tools easily create shapes on screens by clicking a shape icon. You may then click and drag the shape on the screen until the shape reaches the desired size and form. Shape tools create circles, ovals or ellipses, squares or rectangles, or trapezoids and polygons. Shape tools draw precise lines, Bézier curves, and freehand lines. Shape tools that push shape limitations are SKEW, REFLECT, and SPIN or FREE ROTATION tools. SKEW shape tools angularly distort images much the way italicizing distorts text. REFLECT creates mirror images. SPIN or FREE ROTATION rotates design elements around a stationary point.

Continued on next page

Rendering tools Rendering tools are electronic replicas of traditional drawing tools for drawing, tracing, and line work. To select rendering tools, click on the icon resembling the traditional drawing tool. . The input device (mouse, trackball, electronic tablet, or pen) used to draw imitates the effect of the traditional drawing tool. Some common rendering tools are the PENCIL, BRUSH, AIRBRUSH, ERASER, BUCKET, BLEND, EYEDROPPER, and TYPE.

PENCIL: With the PENCIL tool, you can draw lines resembling pencil strokes. You can change the width of the pencil stroke. Click the icon that resembles a pencil to access.

BRUSH: The effects of brush strokes are possible while working' with the tool BRUSH. The width of brush strokes is variable.

AIRBRUSH: The AIRBRUSH tool applies pigments in evenly sprayed patterns. The width of the airbrush stroke and the density of the pigment are adjustable.

Figure 8-21 illustrates the differences between rendering tools.

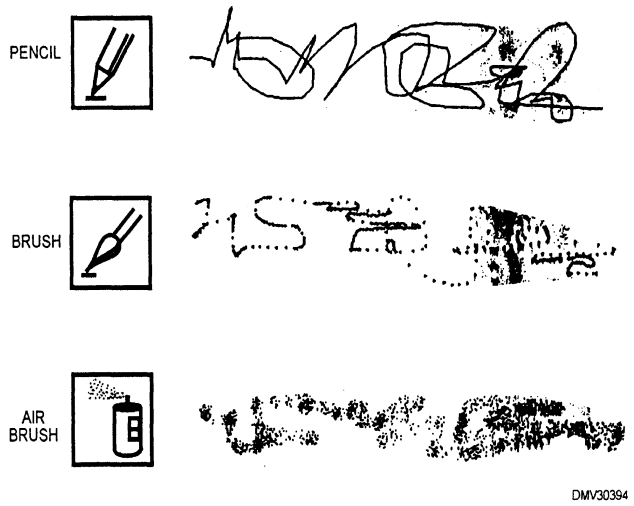


Figure 8-21.—The difference between the pencil, brush, and airbrush rendering took.

Continued on next page

Rendering tools (Continued)

ERASER: The ERASER tool removes strokes or pigmentation from areas much as pencil erasers remove graphite. By selecting ERASER, you erase everything you drag the eraser over.

BUCKET: The BUCKET icon appears as a bucket of pouring pigment and is used to completely fill enclosed spaces with pigment or patterns. If the object is not fully enclosed, the fill color or pattern spills into white spaces surrounding the object. Make sure the object you desire to pour pigmentation into is fully enclosed by pixels.

Figure 8-22 shows a fully enclosed object and a partially enclosed object filled with pattern by the BUCKET tool.

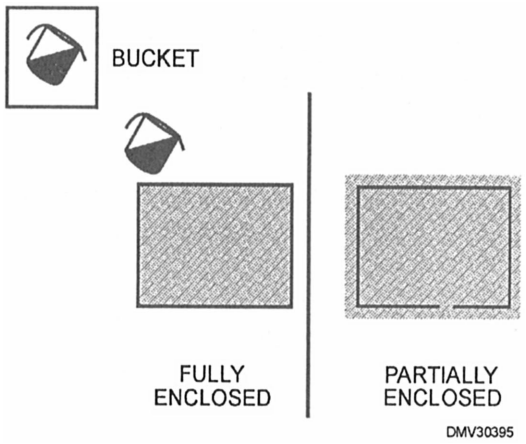


Figure 8-22.—The bucket tool fills objects with color or patterns.

BLEND: BLEND tools blur the distinction between one color or pattern and the next. Use a BLEND tool when you do not want distinct lines.

EYEDROPPER: Use the EYEDROPPER tool to mix and match any color on the illustration by extracting a sample of the original color with the eyedropper.

TYPE: Integrate text directly into graphic images without importing it from other software. Graphic programs offer a variety of fonts and sizes with the ability to outline, bold, shadow, and color letters.

Continued on next page

Blending tools

Blending tools blur the distinct lines between colors and patterns. They make sharp lines fuzzy and can zoom in and out of images. Some common blending tools are FEATHER, DEFRINGE, CLONE or RUBBERSTAMP, SMUDGE, CROPPER, GRABBER, ZOOM, PANNING, and SHARPEN.

FEATHER or DEFRINGE: Feathering or defringing creates a gradual transition between pixels on the edges of selected objects and backgrounds. This is useful when combining objects from different images to form one composition.

CLONE or RUBBERSTAMP: With CLONE or RUBBERSTAMP, you may copy objects, colors, or patterns and place them in other areas of the image. Retouching damaged areas on photographs or continuous-tone originals is easily done with this tool.

SMUDGE: The SMUDGE tools smears adjoining pixels with similar characteristics much like dragging fingers through wet paint smears color into the surrounding areas. This tool is excellent for softening unattractive features in portraiture used in Welcome Aboard biographies.

CROPPER: CROPPER tools crop selected portions of images and discard the rest.

GRABBER: To move objects larger than your open onscreen window, use the GRABBER tool and push or pull the image around on the screen.

ZOOM: Magnification of images or selected portions of images is possible with the ZOOM tool. This tool also pushes selected images into the background. Use this tool when determining the best composition.

PANNING: Moving from side-to-side across images like motion picture or video cameras is an effect accomplished by the PANNING tool.

SHARPEN: The SHARPEN tool increases or decreases image focus by altering the contrast in surrounding pixels.

Continued on next page

Stylizing filters

Stylizing filters are the whistles and bugles special effects of graphics software programs. Stylizing filters modify entire pixel maps. Some common stylizing filters include PIXELATION, WRAPPING or ENCRUSTING, STENCIL, DRAPING, TILING, POSTERIZE, THRESHOLDING, FACETING, CRYSTALLIZING, MOSAIC, NOISE, DIFFUSE, EMBOSS, FIND EDGES/TRACE CONTOUR, FRAGMENT, POINTILLIST or IMPRESSIONIST, SOLARIZE, SHARPEN, BLUR, and DISTORTION.

PIXELATION: PIXELATION is the selection of big or small pixels. Large pixels create jagged edges and amplify the computer-generated appearance of drawn objects.

Figure 8-23 shows pixelation on a circular form.

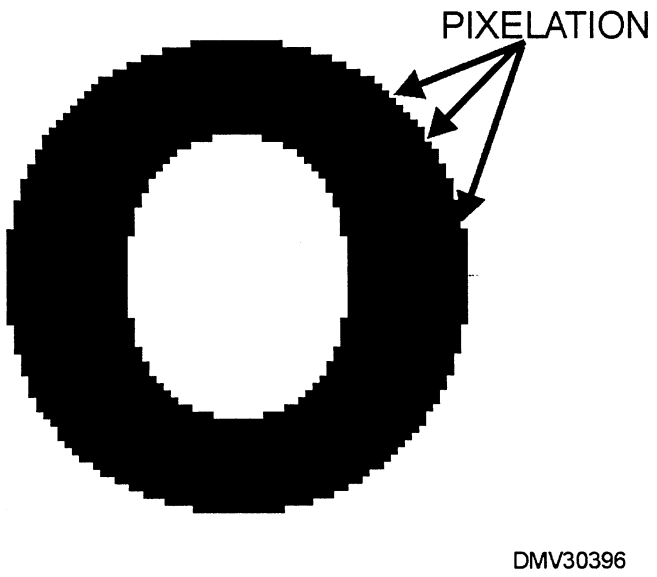


Figure 8-23.—Pixelation on the circular form of the letter "O".

Continued on next page

Stylizing filters (Continued)

WRAPPING or ENCRUSTING: WRAPPING or ENCRUSTING contours colors and patterns around shapes.

Figure 8-24 shows the effects of wrapping pattern around a sphere.

Figure 8-24.—A pattern wrapped around a sphere.

STENCIL: To lock all areas of your image together, use the STENCIL feature. STENCIL makes all areas of the image dependant on each other. This feature is sometimes referred to as color masking.

DRAPING: Adding a pattern to objects to resemble the drapes and folds in cloth is called DRAPING.

Figure 8-25 shows an example of draping pattern over a sphere.

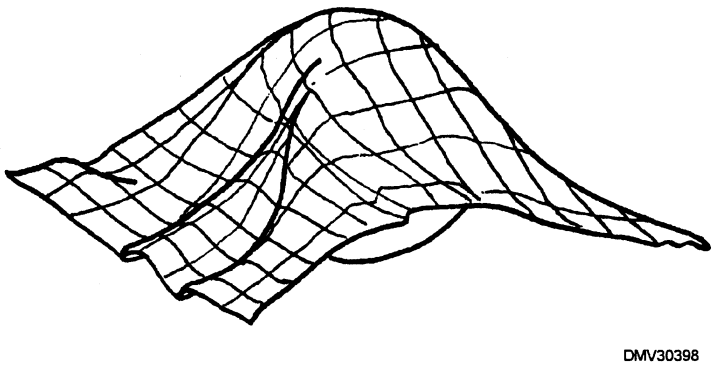


Figure 8-25.—Draping.

Continued on next page

Stylizing filters (Continued)

TILING: TILING creates patterns and saves them to tiles. Repeating pattern tile creates texture that you can add to any object.

POSTERIZE or SOLARIZE: Posterizing alters contrast levels in images into which you may add colors or patterns. SOLARIZE is similar to POSTERIZE except that the alteration approaches contrast extremes and the image remains monochromatic. These filters are useful for separating art for color reproduction or silk screenings.

THRESHOLDING: To reduce images to essential black-and-white areas, use the THRESHOLD command.

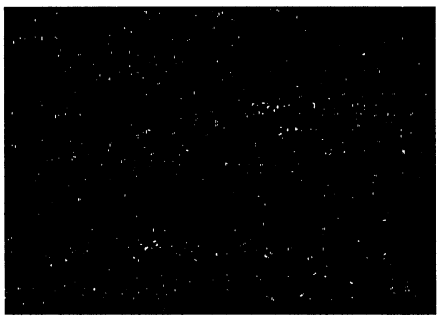
FACETING: Create blocks of like-colored pixels by using FACETING to group pixels together.

CRYSTALLIZING: CRYSTALLIZING arranges similarly colored pixels into polygonic or hexigonic shapes resembling cut stones.

MOSAIC: With MOSAIC, you can specify the size and position of blocks of pixels. This filter is useful and commonly used to obliterate identifiable features in photographs and television.

NOISE: The NOISE filter replicates television transmission noise by adding random patterns to illustrations.

Figure 8-26 shows NOISE.



DMV30399

Figure 8-26.—Noise

Continued on next gage

Stylizing filters (Continued)

DIFFUSE: DIFFUSE filters soften images to appear slightly out of focus.

EMBOSS: To impart three-dimensional effects to design elements, use EMBOSS. The affected elements appear lifted from the screen or paper surface.

FIND EDGES/TRACE CONTOUR: This filter reduces images to line drawings by tracing borders and outlines.

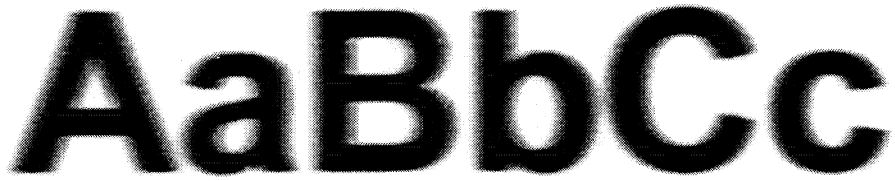
FRAGMENT: The FRAGMENT filter multiplies images and offsets them from each other.

POINTILLIST or IMPRESSIONIST: The POINTILLIST or IMPRESSIONIST filters convert illustrations and paintings into thousands of colored dots that imitate the paintings of the mid- to late-nineteenth century painting style of the same name.

SHARPEN: Use this command to slightly sharpen the outline of design elements or out-of-focus elements in photographs. SHARPEN filters may pixelate or degrade resolution when used excessively.

BLUR: The BLUR filter has multiple applications. Use BLUR to soften images or to softly haze backgrounds. Blur filters can be used to vignette images. BLUR can also create the appearance of sudden movement.

Figure 8-27 shows how BLUR filters can be used.



DMV30400

Figure 8-27.—Using a blur filter.

Continued on next page

Stylizing filters (Continued)

DISTORTION: DISTORTION filters distort or alter objects, patterns, and textures. They come in a variety of special effects including PINCH, RIPPLE, SPHERIC, TWIRL, and WAVE. You can expect many more special effect filters to show up in more sophisticated software programs.

Figure 8-28 shows examples of some common distortion filters.

DMV30401

Figure 8-28.—Distortion filters.

Continued on next page

Graphics Software, Continued

Color capabilities

Using color graphics software programs requires more than 16 MB of RAM to run efficiently. Files saved in color are also memory hungry. The most basic color board is an 8-bit card supporting 256 colors onscreen simultaneously. Each bit receives eight bits of information to display a color. Colors boards containing 24-bits have the ability to produce 16.8 million onscreen colors. These 24-bit cards create continuous colors that blend smoothly. Increase shop versatility by installing a 2 MB 24-bit color card.

Color formats

Computer color can be created in RGB (Red, Green, and Blue), CYMK (Cyan, Yellow, Magenta, and Black), or Pantone color formats. RGB is the format normally used on cathode-ray tubes in computer monitors. Colors appear vivid and bright, but do not translate well into printed images. CYMK is the format used when preparing artwork for print. CYMK color appears less intense. Convert RGB color imagery to the CYMK format before printing or initially create imagery in the CYMK color format. Pantone color is used for spot color and should not be used in four-color process printing.

Color special effects

Illustrations resembling the high resolution of fine color photographs are attainable using programmable color palettes. Onscreen color special effects filters make it easier to mimic traditional art media and substrate surfaces.

CHARCOAL: To subtly add shade to color, use the CHARCOAL tool. This replicates pastels in texture.

WETPAINT: This special effects tool keeps onscreen images fluid. Painted areas in WETPAINT remain moveable and you are able to manipulate the painted mass until saved.

OVERPAINT or UNDERPAINT: Similar to overpainting and under-painting in the traditional media of watercolor, oil, and acrylic pigments, the OVERPAINT or UNDERPAINT tools allow the application of colors over and under already existing color.

WASH, SHADE, or STAIN: These effects simulate glazing in traditional art media. Color applied by WASH, SHADE, or STAIN options appear in thin, transparent shades.

Continued on next page

Color special effects (Continued)

COLOR CYCLING: To simulate movement in images created onscreen, try the COLOR CYCLING effect. Perceived movement is achieved by displaying pixels in set palettes or selected palettes in a rainbow-like gradient.

SMEAR: The SMEAR tool allows you to push and move colors and patterns around onscreen as if they were wet paint. The smudges, smears, and softened edges resemble the effects of pastels or impasto.

BRUSHES: More sophisticated image-editing software programs not only have brush and brush size selections but also are capable of being pressure sensitive. Some software offers bristly or smooth brush hairs for dry brush and smooth applications of pigments.

EFFECTS: To create more painterly effects, graphics software programs have pigment application effects resembling oil paint, pastel, felt tip, and colored pencil textures.

SURFACES: Just as media textures vary so can substrate surfaces. The SURFACES special effects options visually emboss images with substrate surface texture resembling canvas, rough and smooth Bristol board, linens, and weaves.

Working in color

Overuse or improper use of color is offensive. Practice the principles in color theory.

To increase resolution in final printed products, create the art in DPI (dots per inch) at twice the intended printed lines per inch (LPI). The higher the resolution, the fewer problems you have with moire and tonal patterns.

Work with color by creating masters in monochrome first. Once you save the monochrome images, experiment with color variations on copies. This develops a sense of the most economical and effective use of color.

Periodically save line drawings at various stages of completeness as separate files. Should you make mistakes or change your mind about applying a particular color or pattern, return to the last line drawing saved.

Desktop Publishing Software

Introduction

DMs may need to become familiar with desktop publishing software, particularly in the absence of Lithographer's Mates. Desktop publishing is used for Welcome Aboard brochures, local instructions, newsletters, Personnel Qualification Standards (PQS), forms, and training manuals such as this one, which uses a user friendly desktop publishing program that provides easy graphics importation.

Desktop publishing software

Desktop publishing software is software programs that combine the textural manipulation of word processing software with graphics importation for subsequent reproduction. Common categories within desktop publishing programs include text composition, page layout, and graphics.

COMPOSITION: Composition defines the sizes and styles of type, the amount of space between horizontal letters and vertical lines, and the coding of the text copy to meet standards. You can edit text directly or input text from documents created in word processing programs imported into DTP software.

LAYOUT: Layout involves the arrangement of text and graphics on the page. Electronic pasting moves text from one position to another and incorporates graphics into text. Some features include multiple columns, column widths, and gutter space manipulation, printing vertically or horizontally on a page, automatic copyfitting, automatic page numbering, and adding headers and footers.

GRAPHICS: DTP features may scan or import illustrations and graphics either from hard copy or digital data. You can alter or edit images by shrinking or expanding them and create layered four-plate color separations for color reproduction.

Desktop publishing software programs sometimes use tags, frames, and style sheets to logically divide tasks involved in composing, layout, and graphics importation to create camera-ready copy.

Continued on next page

Desktop Publishing Software, Continued

Desktop publishing software manuals	Desktop publishing programs specifically code documents for print. Desktop publishing programs (DTP) tend to be more complicated and precise than word processing or graphics software programs. It is imperative to keep DTP manuals near the computer for continual reference. Incorrect document coding may cause printing errors in the finished product.
Tags	Tags are a group of selected stylistic and typographical attributes that define the appearance or style of paragraphs. The style and topographic attributes include letter style or font, alignment, spacing, breaks, tab sets, special effects, attribute overrides, and paragraph typography. You may also select ruling lines, boxing, or colors. All selected specifications are saved as tags and applied to text in a current document or imported into other documents. Practice good design principles and avoid mixing too many fonts or design elements. Tags must be named for identification and later recall. Name tags according to hierarchy, type, group, or alphabet with a 13-character name.
Frames	Frames are the basic element in the creation of desktop published documents. Frames are box outlines that hold text on pages by defining page size, orientation, margins, and columns. Do not use frames if tags will do the same job because frames require manual manipulation and tags do not. You can create, layer, or delete frames at will or use frames as place holders for inserting graphics. More than one frame may fit on a page simultaneously.
Style sheets	Style sheets are collections of tags, frames, and other information pertinent to the layout of a page. Style sheets determine the appearance of the printed page. When you create style sheets, name and identify them as style sheets with the suffix STY. You may use only one style sheet for each document, but you may switch style sheets in the middle of documents. Switching style sheets allows you to view documents in different presentations and select the best design.

Web Pages

Introduction

Designing web pages is currently one of the fastest growing functions of the Illustrator Draftsman. The Navy is beginning to see the web as an important part of its public image. In efforts to generate interest in the Navy, in individual commands, and in the mission of each command, every command is creating web pages for public view. Increasingly sophisticated web pages require thoughtful and thorough planning by the DM. To view the U. S. Navy web page, enter the Internet address of http://www.navy.mil. To review the latest advancement requirements in the Illustrator Draftsman rate, enter the Internet address of http://www.cnet.navy.mil/netpdtc/.

Web pages

A web page is a computer-generated public introduction to an organization,, command, or unit distributed worldwide via Internet. Web pages also advertise products and provide information. Worldwide Internet transmission is on a network termed the world wide web (WWW). Web pages may contain internal and external links offering additional information and options to viewers.

Web page design

Effective web design requires designers to consider fundamentals such as who the web page is trying to reach and what are they trying to communicate. How much or how little information is appropriate? How often will web pages require updating? Will web pages include schedules or phone directories? Individuals who visit or “hit” web sites want to access information quickly. Plan web sites to logically inform and present a positive image.

Web links

Web links are external and internal transfers to other web sites. External links lead web users away from the main web page. On a command web page, for example, external links may lead the viewer to web sites such as base housing, BEQs, and other Navy web pages. Internal links lead viewers further inside the command into such areas as departments, offices, and shops. Reserve most links for internal transfers to keep web users focused on the command web site. Do not place information on web pages that is subject to Privacy Act protection or in violation of security regulations.

Continued on next page

Web Pages, Continued

Frequently Asked Questions (FAQs)

Frequently Asked Questions (FAQs) are web pages that attempt to answer questions that might reasonably be asked by individuals seeking information on the main web page topic. Questions on command web FAQ pages may relate to command mission, organizational structure, projected deployment schedules, or ship construction statistics. Web users accessing command web pages may be potential shipmates evaluating the desirability of duty at the command. Append FAQs as an internal link to command web pages and update information regularly.

Web page parameters

There are some elements in designing web pages over which you have no control. These elements include the inability to alter page width, texture, and typography. You have no control over the publishing medium or analogous characteristics such as monitor contrast, brightness, resolution, and color settings. You also do not know the speed of the receiving station or the type of browser software (the program used to access a web site). All of these elements affect the way your web site is transmitted and received.

Designing web pages

The keys to designing effective web pages are simplicity and logic. Gather all information beforehand and script it into a logical presentation. Delete nonessential information. Use small, easily drawn icons and simple color palettes. Determine whether or not the commanding officer, executive officer, or command master chief want to address the web with an official Welcome Aboard or command introduction. Canvas the Ombudsman to see if he or she would like the opportunity to share information on an internal web page link. Plan web pages to allow web cruisers to revisit or jump from one link to another smoothly. A typical sequence for command web pages and internal links may be command, commanding officer (or executive officer) welcome, mission, statistics, deployment schedule, command master chief, FAQs, and Ombudsman information.

Web page language

All web pages are created in Hyper-Text Markup Language (HTML), the standard language format for creating documents, and transferred between web sites by hypertext transfer protocol (http). Some software program screen displays allow you to construct information in a more what you see is what you get (WYSIWYG) fashion.

Continued on next page

Web addresses

A web address is an identification address assigned to a computer. Most web addresses begin with "http://" because that is how information moves on the web. The next part of the address usually contains "www" to identify the address as a World Wide Web address. The site specific (command) portion of the address follows "www" and may consist of the command acronym. The web address terminates in a period and suffix (abbreviation) that identifies the domain or type of computer using the address. Notice that web addresses are in lowercase letters. The following table lists common domains.

Domain	Abbreviation
.com	Commercial
.edu	Educational
.gov	Government
.mil	Military
.net	Freenet
.org	Organizational

Figure 8-29 shows typical web addresses.

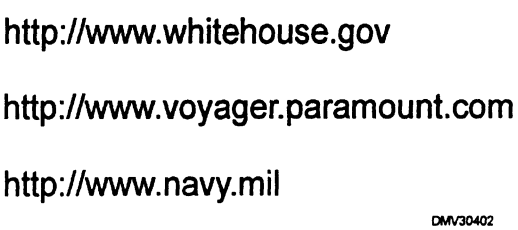


Figure 8-29.—Typical web addressess.

Reviewing web Pages

Once you create a web page, view it using as many different browsers as you can. The web page content may disarrange when translated and viewed with other browsers. You can correct or adjust distortions by modifying the HTML code.

Summary

Review

This chapter is an overview of software programs, features, options, and commands common to Navy graphics shops in the fleet. There is no attempt to identify specific programs or to support one program over another. Software and disk security emphasizes the importance to national security of proper disk handling. The virus segment helps identify and avoid importing problems into the system. Familiarity with features, options, and commands common to many software programs should encourage exploration in program specific attributes. The segments on directories and subdirectories and file formats introduce common file construction. Discussions on word processing, graphics, and desktop publishing software are necessarily generic to avoid the pitfalls of locking onto one specific program. Web page construction represents your command to the world and deserves careful planning and execution.

Comments

Computers play an increasingly important part in your life as a DM with computer-generated imagery as one of the fastest growing commercial fields in the world today. Experiment with the software programs on your work center computer. Your attitude toward computers and your ability to work with them may determine your future success as a DM and the future of the rate in the Navy. Stay abreast of developments. To create successful computer-generated layouts and graphics still requires a traditional foundation in draftsmanship, composition, color harmony, value, texture, and light. Without the knowledge of graphic design principles, computer-generated art approaches technological sterility and discord. Cultivate applications for computer-generated imagery in your command. Aggressively seek and take responsibility for web page construction and other potential graphic applications in your command to keep the rate alive.